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(54) Title: USE OF FUNGICIDAL COMPOUND COMPOSITIONS FOR CONTROLLING CERTAIN RUST FUNGI

(57) Abstract: The present invention relates to the use of a fungicidal composition comprising at least one carboxamide and at least one further compound selected from strobilurins or from triazoles, for controlling certain rust fungi, such as soy bean rust and coffee rust, in crop protection.

Use of fungicidal compound compositions for controlling certain rust fungi

The present invention relates to the use of a fungicidal composition comprising at least one carboxamide and at least one further compound selected from strobilurins or from triazoles, for controlling certain rust fungi, such as soy bean rust and coffee rust, in crop protection.

Asian soy bean rust (ASR) can be caused by either of two fungal species, Phakopsora pachyrhizi or P. meibomiae. P. meibomiae has not been detected in the continental U.S., and is not known to be of economic importance to crop production. However, P. pachyrhizi, a species endemic to Asia, is a devastating disease. In untreated fields in Asia and South America, yield losses ranging from 10 to 80% have been reported due to premature defoliation, fewer seeds, lighter seeds and poor seed quality.

P. pachyrhizi is now present in most of the soy bean growing areas of the world, it originated in NE Asia and was first reported on soy bean in Africa in 1997. The first detection in the Americas was in Paraguay in 2001 , and from there it spread rapidly to all soybean-growing areas of Brazil. It was first recorded in the northern hemisphere in 2004 in Colombia. Hurricane Ivan in September of 2004 was most likely responsible for the recent introduction into the U S.

ASR is carried long distances by wind currents; however, field-to-field transmission through contaminated clothing is also common. The fungus is not seed-transmitted. Most of the knowledge about ASR was developed in subtropical and tropical areas of the world. As with any new disease, its epidemiology and resulting control strategies might change in the temperate growing areas of the U.S.

In addition to soybeans, the Asian soy bean rust fungus is able to infect over 30 legumes such as lima and butter beans, green beans, kidney beans, cowpeas, pigeon peas, yam bean is also a suitable host.

It is already known that numerous carboxamides show activity against *Phakopsora ssp*. (cf. WO 2006/131221, WO 2007/071656). Even if their activity is good at high application rates, in some cases with lower application rates, it is unsatisfactory. Moreover, due to the steadily increasing incidences and levels of resistance of *Phakopsora ssp* against numerous active ingredients there is a strong need for active ingredient compositions that can be used to fight the divulgence of soybean rust.

It has now been found that fungicidal compositions comprising

(I) at least one carboxamide selected from the group consisting of

(I-1) *N*-[2-(1,3-dimethylbutyl)phenyl]-5-fluoro-1,3-dimethyl-1*H*-pyrazole-4-carboxamide;

(I-2) *N*-(3',4'-dichloro-5-fluoro-1,1'-biphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1*H*-pyrazole-4-carboxamide;

(I-3) N-{2-[1,1'-bi(cyclopropyl)-2-yl]phenyl}-1-methyl-3-(difluoromethyl)-1H-pyrazole-4-carboxamide;

(I-4) 3-(difluoromethyl)-1-methyl-N-[9-(propan-2-yl)-1,2,3,4-tetrahydro-1,4-methanonaphthalen-6-yl]-1H-pyrazole-4-carboxamide;

(I-5) N-(3',4'-dichlorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide;

(I-6) N-(2',4'-dichlorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide;

(I-7) 3-(difluoromethyl)-N-[2-(1,1,2,3,3,3-hexafluoropropoxy)phenyl]-1-methyl-1H-pyrazole-4-carboxamide;

(1-8) 3-(difluoromethyl)-1-methyl-N-[2-(1,1,2,2-tetrafluoroethoxy)phenyl]-1H-pyrazole-4-carboxamide;

(1-9) 3-(difluoromethyl)-1-methyl-N-(3',4',5'-trifluorobiphenyl-2-yl)-1H-pyrazole-4-carboxamide;

and at least one further compound selected from (II) or (III)

(II) strobilurins, selected from the group consisting of

(II-1) fluoxastrobin;

(II-2) trifloxystrobin

or from

(III) triazoles, selected from the group consisting of

(III-1) prothioconazole;

(III-2) tebuconazole and

(III-3) fluquinconazole

can be used for controlling certain rust fungi, such as soy bean rust and coffee rust, in crop protection.

N-[2-(1,3-dimethylbutyl)phenyl]-5-fluoro-1,3-dimethyl-1H-pyrazole-4-carboxamide (Compound I-1) and its manufacturing process starting from known and commercially available compounds is described in WO 03/010149.

N-(3',4'-dichloro-5-fluoro-1,1'-biphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide (Compound I-2) and its manufacturing process starting from known and commercially available compounds is described in WO 03/070705.

N-{2-[1,1'-bi(cyclopropyl)-2-yl]phenyl}-1-methyl-3-(difluoromethyl)-1H-pyrazole-4-carboxamide (Compound I-3), also known as sedaxane, and its manufacturing process starting from known and commercially available compounds is described in WO 03/074491, WO 2006/015865 and WO 2006/015866. Sedaxane generally denotes the mixture of 2 cis-isomers 2′-[(1RS,2RS)-1,1′-bicycloprop-2-yl]-3-(difluoromethyl)-1-methylpyrazole-4-carboxanilide and 2 trans-isomers 2′-[(1RS,2SR)-1,1′-bicycloprop-2-yl]-3-(difluoromethyl)-1-methylpyrazole-4-carboxanilide.

3-(difluoromethyl)-1-methyl-N-[9-(propan-2-yl)-1,2,3,4-tetrahydro-1,4-methanonaphthalen-6-yl]-1H-pyrazole-4-carboxamide (compound I-4), also known as isoprazam, and its manufacturing process starting from known and commercially available compounds is described in WO 2004/035589. Isopyrazam generally denotes the mixture of 2 syn-isomers 3-(difluoromethyl)-1-methyl-N-[(1RS,4SR,9RS)-1,2,3,4-tetrahydro-9-isopropyl-1,4-methanonaphthalen-5-yl]pyrazole-4-carboxamide and 2 anti-isomers 3-(difluoromethyl)-1-methyl-N-[(1RS,4SR,9SR)-1,2,3,4-tetrahydro-9-isopropyl-1,4-methanonaphthalen-5-yl]pyrazole-4-carboxamide.

N-(3',4'-dichlorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide (compound I-5), N-(2',4'-dichlorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide (compound I-6) 3-(difluoromethyl)-N-[2-(1,1,2,3,3,3-hexafluoropropoxy)phenyl]-1-methyl-1H-pyrazole-4-carboxamide (compound 1-7), 3-(difluoromethyl)-1-methyl-N-[2-(1,1,2,2-tetrafluoroethoxy)phenyl]-1H-pyrazole-4-carboxamide (compound 1-8) and 3-(difluoromethyl)-1-methyl-N-(3',4',5'-trifluorobiphenyl-2-yl)-1H-pyrazole-4-carboxamide (compound 1-9) and their manufacturing processes starting from known and commercially available compounds are described in WO 2005/123690.

Fluoxastrobin (compound II-1) and its manufacturing process starting from known and commercially available compounds is described in DE-A 196 02 095.

Trifloxystrobin (compound II-2) and its manufacturing process starting from known and commercially available compounds is described in EP-A 0 460 575.

Prothioconazole (compound III-1) and its manufacturing process starting from known and commercially available compounds is described in WO 96/16048.

Tebuconazole (compound III-2) and its manufacturing process starting from known and commercially available compounds is described in EP-A 0 040 345.

Fluquinconazole (compound III-3) and its manufacturing process starting from known and commercially available compounds is described in EP-A 0 183 458.

If appropriate, the carboxamides of group (I), the strobilurines of group (II) and the azoles of group (III) can be present as mixtures of various possible isomeric forms, in particular stereoisomers, such as, for example, E and Z, threo and erythro, and also optical isomers, and, if appropriate, also of tautomers. The formula (I) includes both the E and the Z isomers, and the threo and erythro and also the optical isomers, any mixtures of these isomers and the possible tautomeric forms.

The compounds according to the invention have strong microbicidal action and can be used for controlling certain rust fungi, such as soy bean rust and coffee rust, in crop protection.

Preferred embodiments of the present invention are shown in the subsequent tables

Carboxamide (I)	**Stobilurin (II)**
(I-1) *N*-[2-(1,3-dimethylbutyl)phenyl]-5-fluoro-1,3-dimethyl-1*H*-pyrazole-4-carboxamide;	(II-1) fluoxastrobin
(I-2) *N*-(3',4'-dichloro-5-fluoro-1,1'-biphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1*H*-pyrazole-4-carboxamide;	(II-1) fluoxastrobin
(I-3) N-{2-[1,1'-bi(cyclopropyl)-2-yl]phenyl}-1-methyl-3-(difluoromethyl)-1H-pyrazole-4-carboxamide;	(II-1) fluoxastrobin
(I-4) 3-(difluoromethyl)-1-methyl-N-[9-(propan-2-yl)-1,2,3,4-tetrahydro-1,4-methanonaphthalen-6-yl]-1H-pyrazole-4-carboxamide;	(II-1) fluoxastrobin
(I-5) N-(3',4'-dichlorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide;	(II-1) fluoxastrobin
(I-6) N-(2',4'-dichlorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide	(II-1) fluoxastrobin

Carboxamide (I)	Stobilurin (II)
(I-7) 3-(difluoromethyl)-N-[2-(1,1,2,3,3,3-hexafluoropropoxy)-phenyl]-1-methyl-1H-pyrazole-4-carboxamide	(II-1) fluoxastrobin
(1-8) 3-(difluoromethyl)-1-methyl-N-[2-(1,1,2,2-tetrafluoroethoxy)-phenyl]-1H-pyrazole-4-carboxamide;	(II-1) fluoxastrobin
(1-9) 3-(difluoromethyl)-1-methyl-N-(3',4',5'-trifluorobiphenyl-2-yl)-1H-pyrazole-4-carboxamide;	(II-1) fluoxastrobin
(I-1) *N*-[2-(1,3-dimethylbutyl)phenyl]-5-fluoro-1,3-dimethyl-1*H*-pyrazole-4-carboxamide;	(II-2) trifloxystrobin
(I-2) *N*-(3',4'-dichloro-5-fluoro-1,1'-biphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1*H*-pyrazole-4-carboxamide;	(II-2) trifloxystrobin
(I-3) N-{2-[1,1'-bi(cyclopropyl)-2-yl]phenyl}-1-methyl-3-(difluoromethyl)-1H-pyrazole-4-carboxamide;	(II-2) trifloxystrobin
(I-4) 3-(difluoromethyl)-1-methyl-N-[9-(propan-2-yl)-1,2,3,4-tetrahydro-1,4-methanonaphthalen-6-yl]-1H-pyrazole-4-carboxamide;	(II-2) trifloxystrobin
(I-5) N-(3',4'-dichlorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide;	(II-2) trifloxystrobin
(I-6) N-(2',4'-dichlorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide	(II-2) trifloxystrobin
(I-7) 3-(difluoromethyl)-N-[2-(1,1,2,3,3,3-hexafluoropropoxy)-phenyl]-1-methyl-1H-pyrazole-4-carboxamide	(II-2) trifloxystrobin
(1-8) 3-(difluoromethyl)-1-methyl-N-[2-(1,1,2,2-tetrafluoroethoxy)-phenyl]-1H-pyrazole-4-carboxamide;	(II-2) trifloxystrobin
(1-9) 3-(difluoromethyl)-1-methyl-N-(3',4',5'-trifluorobiphenyl-2-yl)-1H-pyrazole-4-carboxamide;	(II-2) trifloxystrobin

Carboxamide (I)	Triazole (III)
(I-1) *N*-[2-(1,3-dimethylbutyl)phenyl]-5-fluoro-1,3-dimethyl-1*H*-pyrazole-4-carboxamide;	(III-1) prothioconazole;
(I-2) *N*-(3',4'-dichloro-5-fluoro-1,1'-biphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1*H*-pyrazole-4-carboxamide;	(III-1) prothioconazole;
(I-3) N-{2-[1,1'-bi(cyclopropyl)-2-yl]phenyl}-1-methyl-3-(difluoromethyl)-1H-pyrazole-4-carboxamide;	(III-1) prothioconazole;
(I-4) 3-(difluoromethyl)-1-methyl-N-[9-(propan-2-yl)-1,2,3,4-tetrahydro-1,4-methanonaphthalen-6-yl]-1H-pyrazole-4-carboxamide;	(III-1) prothioconazole;
(I-5) N-(3',4'-dichlorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-	(III-1) prothioconazole;

Carboxamide (I)	Triazole (III)
1H-pyrazole-4-carboxamide;	
(I-6) N-(2',4'-dichlorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide	(III-1) prothioconazole
(I-7) 3-(difluoromethyl)-N-[2-(1,1,2,3,3,3-hexafluoropropoxy)-phenyl]-1-methyl-1H-pyrazole-4-carboxamide	(III-1) prothioconazole
(1-8) 3-(difluoromethyl)-1-methyl-N-[2-(1,1,2,2-tetrafluoroethoxy)-phenyl]-1H-pyrazole-4-carboxamide;	(III-1) prothioconazole
(1-9) 3-(difluoromethyl)-1-methyl-N-(3',4',5'-trifluorobiphenyl-2-yl)-1H-pyrazole-4-carboxamide;	(III-1) prothioconazole
(I-1) *N*-[2-(1,3-dimethylbutyl)phenyl]-5-fluoro-1,3-dimethyl-1*H*-pyrazole-4-carboxamide;	(III-2) tebuconazole
(I-2) *N*-(3',4'-dichloro-5-fluoro-1,1'-biphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1*H*-pyrazole-4-carboxamide;	(III-2) tebuconazole
(I-3) N-{2-[1,1'-bi(cyclopropyl)-2-yl]phenyl}-1-methyl-3-(difluoromethyl)-1H-pyrazole-4-carboxamide;	(III-2) tebuconazole
(I-4) 3-(difluoromethyl)-1-methyl-N-[9-(propan-2-yl)-1,2,3,4-tetrahydro-1,4-methanonaphthalen-6-yl]-1H-pyrazole-4-carboxamide;	(III-2) tebuconazole
(I-5) N-(3',4'-dichlorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide;	(III-2) tebuconazole
(I-6) N-(2',4'-dichlorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide	(III-2) tebuconazole
(I-7) 3-(difluoromethyl)-N-[2-(1,1,2,3,3,3-hexafluoropropoxy)-phenyl]-1-methyl-1H-pyrazole-4-carboxamide	(III-2) tebuconazole
(1-8) 3-(difluoromethyl)-1-methyl-N-[2-(1,1,2,2-tetrafluoroethoxy)-phenyl]-1H-pyrazole-4-carboxamide;	(III-2) tebuconazole
(1-9) 3-(difluoromethyl)-1-methyl-N-(3',4',5'-trifluorobiphenyl-2-yl)-1H-pyrazole-4-carboxamide;	(III-2) tebuconazole
(I-1) *N*-[2-(1,3-dimethylbutyl)phenyl]-5-fluoro-1,3-dimethyl-1*H*-pyrazole-4-carboxamide;	(III-3) fluquinconazole
(I-2) *N*-(3',4'-dichloro-5-fluoro-1,1'-biphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1*H*-pyrazole-4-carboxamide;	(III-3) fluquinconazole
(I-3) N-{2-[1,1'-bi(cyclopropyl)-2-yl]phenyl}-1-methyl-3-(difluoromethyl)-1H-pyrazole-4-carboxamide;	(III-3) fluquinconazole
(I-4) 3-(difluoromethyl)-1-methyl-N-[9-(propan-2-yl)-1,2,3,4-tetrahydro-1,4-methanonaphthalen-6-yl]-1H-pyrazole-4-carboxamide;	(III-3) fluquinconazole
(I-5) N-(3',4'-dichlorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-	(III-3) fluquinconazole

Carboxamide (I)	Triazole (III)
1H-pyrazole-4-carboxamide;	
(I-6) N-(2',4'-dichlorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide	(III-3) fluquinconazole
(I-7) 3-(difluoromethyl)-N-[2-(1,1,2,3,3,3-hexafluoropropoxy)-phenyl]-1-methyl-1H-pyrazole-4-carboxamide	(III-3) fluquinconazole
(1-8) 3-(difluoromethyl)-1-methyl-N-[2-(1,1,2,2-tetrafluoroethoxy)-phenyl]-1H-pyrazole-4-carboxamide;	(III-3) fluquinconazole
(1-9) 3-(difluoromethyl)-1-methyl-N-(3',4',5'-trifluorobiphenyl-2-yl)-1H-pyrazole-4-carboxamide;	(III-3) fluquinconazole

In a most preferred embodiment of the present invention the fungicidal composition comprises (I-2) *N*-(3',4'-dichloro-5-fluoro-1,1'-biphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1*H*-pyrazole-4-carboxamide and (III-1) prothioconazole.

The fungicidal compositions according to the present invention comprise the carboxamide (I) and the strobilurine (II) or the triazole (III) in a ratio of 50 : 1 to1 : 50 (I)/(II) or (I)/(III), preferably in a ratio of 10 : 1 to1 : 10 (I)/(II) or (I)/(III), most preferably in a ratio of 5 : 1 to1 : 5 (I)/(II) or (I)/(III).

The following diseases of soy bean plants can preferably be controlled by the compound compositions according to the present invention:

alternaria leaf spot (Alternaria spec. atrans tenuissima), anthracnose (Colletotrichum gloeosporoides dematium var. truncatum), brown spot (Septoria glycines), cercospora leaf spot and blight (Cercospora kikuchii), choanephora leaf blight (Choanephora infundibulifera trispora (syn.)), dactuliophora leaf spot (Dactuliophora glycines), downy mildew (Peronospora manshurica), drechslera blight (Drechslera glycini), frogeye leaf spot (Cercospora sojina), leptosphaerulina leaf spot (Leptosphaerulina trifolii), phyllostica leaf spot (Phyllosticta sojaecola), powdery mildew (Microsphaera diffusa), pyrenochaeta leaf spot (Pyrenochaeta glycines), rhizoctonia aerial, foliage, and web blight (Rhizoctonia solani), rust (Phakopsora pachyrhizi), scab (Sphaceloma glycines), stemphylium leaf blight (Stemphylium botryosum), target spot (Corynespora cassiicola), black root rot (Calonectria crotalariae), charcoal rot (Macrophomina phaseolina), fusarium blight or wilt, root rot, and pod and collar rot (Fusarium oxysporum, Fusarium orthoceras, Fusarium semitectum, Fusarium equiseti), mycoleptodiscus root rot (Mycoleptodiscus terrestris), neocosmospora (Neocosmopspora vasinfecta), pod and stem blight (Diaporthe phaseolorum), stem canker (Diaporthe phaseolorum var. caulivora), phytophthora rot (Phytophthora megasperma), brown stem rot (Phialophora gregata), pythium rot (Pythium aphanidermatum, Pythium irregulare, Pythium debaryanum, Pythium myriotylum, Pythium ultimum), rhizoctonia root rot, stem decay, and

damping-off (Rhizoctonia solani), sclerotinia stem decay (Sclerotinia sclerotiorum), sclerotinia southern blight (Sclerotinia rolfsii), thielaviopsis root rot (Thielaviopsis basicola). Particular preference is given to using the fungicidal compositions according to the present invention for controlling Phakopsora pachyrhizi and Phakopsora meibomiae.

In the present case, unwanted microorganisms are to be understood as meaning the organisms mentioned above. The compounds according to the invention can therefore be employed for protecting plants against attack by the abovementioned pathogens within a certain period of time after the treatment. The period of time within which protection is effected generally extends from 1 to 10 days, preferably from 1 to 7 days, after the treatment of the plants with the active compounds.

The fact that the active compounds, in the concentrations required for controlling plant diseases, are well tolerated by plants permits the treatment of above-ground parts of plants, of vegetative propagation material and seed, and of the soil.

In conjunction with the present invention "controlling" denotes a significant reduction of the rust infestation in comparison to the untreated crop, more preferably the infestation is essentially diminished (50-79%), most preferably the infestation is totally suppressed (80-100%).

In this context, the fungicidal compositions according to the present invention can be used with particularly good results for controlling soy bean diseases, such as, for example, against Phakopsora species.

The fungicidal compositions according to the present invention are also suitable for increasing the yield. Moreover, they display a low degree of toxicity and are tolerated well by plants.

All plants and plant parts can be treated in accordance with the invention. Plants are understood as meaning, in the present context, all plants and plant populations, such as desired and undesired wild plants or crop plants (including naturally occurring crop plants). Crop plants may be plants which can be obtained by conventional breeding and optimization methods or else by biotechnological and genetic engineering methods or by combinations of these methods, including the transgenic plants and including the plant varieties capable or not capable of being protected by plant breeders' rights. Plant parts are to be understood as meaning all above-ground and subterranean parts and organs of the plants, such as shoot, leaf, flower and root, examples which may be mentioned being leaves, needles, stalks, stems, flowers, fruiting bodies, fruits and seeds, and also roots, tubers and rhizomes. The plant parts also include harvested material and vegetative and generative propagation material, for example cuttings, tubers, rhizomes, slips and seeds.

The treatment according to the invention with the active compounds, of the plants and plant parts, is carried out directly or by acting on their environment, habitat, or store by the customary treatment methods, for example by immersion, spraying, vaporizing, fogging, broadcasting, painting on and, in the case of propagation material, in particular in the case of seeds, furthermore by coating with one or more coats.

Depending on their respective physical and/or chemical properties, the active compounds can be converted to the customary formulations, such as solutions, emulsions, suspensions, powders, foams, pastes, granules, aerosols, very fine capsules in polymeric substances and in coating compositions for seed, and also ULV cold- and warm-fogging formulations.

These formulations are produced in a known manner, for example by mixing the active compounds with extenders, that is liquid solvents, pressurized liquefied gases and/or solid carriers, optionally with the use of surface-active agents, that is emulsifiers and/or dispersants and/or foam formers. If the extender used is water, it is also possible to employ for example organic solvents as cosolvents. Suitable liquid solvents are essentially: aromatics, such as xylene, toluene or alkylnaphthalenes, chlorinated aromatics or chlorinated aliphatic hydrocarbons, such as chlorobenzenes, chloroethylenes or methylene chloride, aliphatic hydrocarbons, such as cyclohexane or paraffins, for example mineral oil fractions, alcohols, such as butanol or glycol as well as their ethers and esters, ketones, such as acetone, methyl ethyl ketone, methyl isobutyl ketone or cyclohexanone, strongly polar solvents, such as dimethylformamide and dimethyl sulphoxide, and also water. Liquefied gaseous extenders or carriers are those liquids which are gaseous at ambient temperature and at atmospheric pressure, for example aerosol propellants such as halogenated hydrocarbons and also butane, propane, nitrogen and carbon dioxide. As solid carriers there are suitable: for example ground natural minerals, such as kaolins, clays, talc, chalk, quartz, attapulgite, montmorillonite or diatomaceous earth, and ground synthetic minerals, such as finely divided silica, alumina and silicates. As solid carriers for granules there are suitable: for example crushed and fractionated natural rocks such as calcite, pumice, marble, sepiolite and dolomite, and also synthetic granules of inorganic and organic meals, and granules of organic material such as sawdust, coconut shells, maize cobs and tobacco stalks. As emulsifiers and/or foam formers there are suitable: for example non-ionic and anionic emulsifiers, such as polyoxyethylene fatty acid esters, polyoxyethylene fatty alcohol ethers, for example alkylaryl polyglycol ethers, alkylsulphonates, alkyl sulphates, arylsulphonates and protein hydrolysates. As dispersants there are suitable: for example lignosulphite waste liquors and methylcellulose.

Tackifiers such as carboxymethylcellulose and natural and synthetic polymers in the form of powders, granules or latices, such as gum arabic, polyvinyl alcohol and polyvinyl acetate, as well

as natural phospholipids, such as cephalins and lecithins, and synthetic phospholipids, can be used in the formulations. Other possible additives are mineral and vegetable oils.

It is possible to use colorants such as inorganic pigments, for example iron oxide, titanium oxide and Prussian Blue, and organic dyestuffs, such as alizarin dyestuffs, azo dyestuffs and metal phthalocyanine dyestuffs, and trace nutrients such as salts of iron, manganese, boron, copper, cobalt, molybdenum and zinc.

The formulations in general contain between 0.1 and 95 per cent by weight of active compounds, preferably between 0.5 and 90%.

The compound combinations according to the present invention, as such or in their formulations, can also be used as a mixture with known fungicides, bactericides, acaricides, nematicides, or insecticides, for example, to broaden the activity spectrum or prevent the development of resistance. In many instances, synergistic effects are obtained, i.e. the activity of the mixture exceeds the activity of the individual components.

The active compound combinations according to the invention can be employed as such, in the form of their formulations or the use forms prepared therefrom, such as ready-to-use solutions, suspensions, wettable powders, pastes, soluble powders, dusts and granules. They are applied in the customary manner, for example by pouring, spraying, atomizing, broadcasting, dusting, foaming, painting on and the like. It is furthermore possible to apply the active compounds by the ultra-low-volume method, or to inject the active compound preparation or the active compound itself into the soil. The seed of the plants can also be treated.

When employing the compound combinations according to the present invention as fungicides, the application rates can be varied within a substantial range, depending on the type of application. In the treatment of plant parts, the application rates of active compound are generally between 0.1 and 10 000 g/ha, preferably between 10 and 1000 g/ha. For the treatment of seed, the application rates of active compound are generally between 0.001 and 50 g per kilogram of seed, preferably between 0.01 and 10 g per kilogram of seed. For treating the soil, the application rates of active compound are generally between 0.1 and 10 000 g/ha, preferably between 1 and 5000 g/ha.

As already mentioned above, all plants and their parts can be treated in accordance with the invention. In a preferred embodiment, plant species and plant varieties which are found in the wild or are obtained by traditional biological breeding methods, such as hybridization or protoplast fusion, and parts of the former are treated. In a further preferred embodiment, transgenic plants

and plant varieties which have been obtained by recombinant methods, if appropriate in combination with traditional methods (genetically modified organisms), and their parts are treated. The term "parts" or "parts of plants" or "plant parts" has been illustrated above.

Particularly preferably, plants of the plant cultivars which are in each case commercially available or in use are treated according to the invention. Plant cultivars are understood as meaning plants with new properties ("traits") which have been obtained by conventional cultivation, by mutagenesis or else by recombinant DNA techniques. These may be cultivars, breeds, biotypes or genotypes.

Depending on the plant species or plant cultivars, their location and growth conditions (soils, climate, vegetation period, nutrition), the treatment according to the invention may also result in superadditive ("synergistic") effects. Thus, for example, reduced application rates and/or extensions of the activity spectrum and/or an increase in the activity of the substances and compositions that can be used according to the invention, better plant growth, increased tolerance to high or low temperatures, increased tolerance to drought or to water or soil salinity, increased flowering performance, easier harvesting, accelerated maturation, higher harvest yields, better quality and/or a higher nutritional value of the harvested products, better storage stability and/or processability of the harvested products which exceed the effects which were actually to be expected are possible.

The preferred transgenic plants or plant cultivars (i.e. those obtained by genetic engineering) which are to be treated according to the invention include all plants which, as a result of the recombinant modification, received genetic material which imparts particularly advantageous useful properties ("traits") to these plants. Examples of such properties are better plant growth, increased tolerance to high or low temperatures, increased tolerance to drought or to water or soil salinity, increased flowering performance, easier harvesting, accelerated maturation, higher harvest yields, better quality and/or a higher nutritional value of the harvested products, better storage stability and/or processability of the harvested products. Further and particularly emphasized examples of such properties are a better defence of the plants against animal and microbial pests, such as against insects, mites, phytopathogenic fungi, bacteria and/or viruses, and also increased tolerance of the plants to certain herbicidally active compounds.

Biological Examples

Example 1

Phakopsora test (soybeans) / protective

Solvent: 28,5 parts by weight of acetone

Emulsifier: 1,5 parts by weight of polyoxyethylene alkyl phenyl ether

To produce a suitable preparation of active compound, 1 part by weight of active compound or active compound combination is mixed with the stated amounts of solvent and emulsifier, and the concentrate is diluted with water to the desired concentration.

To test for protective activity, young plants are sprayed with the preparation of active compound or active compound combination at the stated rate of application. After the spray coating has dried on, the plants are placed in a greenhouse at a temperature of approximately 23°C and a relative atmospheric humidity of approximately 70%.

1 day after spraying, the plants are inoculated with an aqueous spore suspension of the causal agent of soybean rust **(Phakopsora pachyrhizi)**. The plants are then placed in a greenhouse at approximately 20°C and a relative atmospheric humidity of approximately 80%.

The test is evaluated 10 days after the inoculation. 0% means an efficacy which corresponds to that of the control, while an efficacy of 100% means that no disease is observed.

The table below clearly shows that the observed activity of the active compound combination according to the invention is greater than the calculated activity, i.e. a synergistic effect is present.

Table

Phakopsora test (soybeans) / protective

Active compound Known:	Rate of application of active compound in ppm	Efficacy in %
(I-2) Bixafen	10	50
(III-1) Prothioconazole	0.5	50

Inventive Compound combination:

	Ratio of the mixture	Rate of application of active compound in ppm	Actual efficacy	Expected value, calculated using Colby's formula
(I-2) Bixafen + (III-1) Prothioconazole	**20:1**	10 + 0.5	**98**	**75**

Claims

1. Use of a fungicidal composition comprising

(I) at least one carboxamide selected from the group consisting of

(I-1) *N*-[2-(1,3-dimethylbutyl)phenyl]-5-fluoro-1,3-dimethyl-1*H*-pyrazole-4-carboxamide;

(I-2) *N*-(3',4'-dichloro-5-fluoro-1,1'-biphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1*H*-pyrazole-4-carboxamide;

(I-3) N-{2-[1,1'-bi(cyclopropyl)-2-yl]phenyl}-1-methyl-3-(difluoromethyl)-1H-pyrazole-4-carboxamide;

(I-4) 3-(difluoromethyl)-1-methyl-N-[9-(propan-2-yl)-1,2,3,4-tetrahydro-1,4-methanonaphthalen-6-yl]-1H-pyrazole-4-carboxamide;

(I-5) N-(3',4'-dichlorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide;

(I-6) N-(2',4'-dichlorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide;

(I-7) 3-(difluoromethyl)-N-[2-(1,1,2,3,3,3-hexafluoropropoxy)phenyl]-1-methyl-1H-pyrazole-4-carboxamide;

(1-8) 3-(difluoromethyl)-1-methyl-N-[2-(1,1,2,2-tetrafluoroethoxy)phenyl]-1H-pyrazole-4-carboxamide;

(1-9) 3-(difluoromethyl)-1-methyl-N-(3',4',5'-trifluorobiphenyl-2-yl)-1H-pyrazole-4-carboxamide;

at least one further compound selected from groups (II) or (III)

(II) strobilurins, selected from the group consisting of

(II-1) fluoxastrobin

(II-2) trifloxystrobin

(III) triazoles, selected from the group consisting of

(III-1) prothioconazole

(III-2) tebuconazole and

(III-3) fluquinconazole

for controlling rust fungi in crop protection.

2. Use according to claim 1, characterized in that, the composition comprises at least one carboxamide selected from the group consisting of

(I-1) *N*-[2-(1,3-dimethylbutyl)phenyl]-5-fluoro-1,3-dimethyl-1*H*-pyrazole-4-carboxamide;

(I-2) *N*-(3',4'-dichloro-5-fluoro-1,1'-biphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1*H*-pyrazole-4-carboxamide;

(I-3) N-{2-[1,1'-bi(cyclopropyl)-2-yl]phenyl}-1-methyl-3-(difluoromethyl)-1H-pyrazole-4-carboxamide;

(I-4) 3-(difluoromethyl)-1-methyl-N-[9-(propan-2-yl)-1,2,3,4-tetrahydro-1,4-methanonaphthalen-6-yl]-1H-pyrazole-4-carboxamide;

(I-5) N-(3',4'-dichlorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide;

(I-6) N-(2',4'-dichlorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide;

(I-7) 3-(difluoromethyl)-N-[2-(1,1,2,3,3,3-hexafluoropropoxy)phenyl]-1-methyl-1H-pyrazole-4-carboxamide;

(1-8) 3-(difluoromethyl)-1-methyl-N-[2-(1,1,2,2-tetrafluoroethoxy)phenyl]-1H-pyrazole-4-carboxamide;

(1-9) 3-(difluoromethyl)-1-methyl-N-(3',4',5'-trifluorobiphenyl-2-yl)-1H-pyrazole-4-carboxamide;

in combination with fluoxastrobin.

3. Use according to claim 1, characterized in that, the composition comprises at least one carboxamide selected from the group consisting of

(I-1) *N*-[2-(1,3-dimethylbutyl)phenyl]-5-fluoro-1,3-dimethyl-1*H*-pyrazole-4-carboxamide;

(I-2) *N*-(3',4'-dichloro-5-fluoro-1,1'-biphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1*H*-pyrazole-4-carboxamide;

(I-3) N-{2-[1,1'-bi(cyclopropyl)-2-yl]phenyl}-1-methyl-3-(difluoromethyl)-1H-pyrazole-4-carboxamide;

(I-4) 3-(difluoromethyl)-1-methyl-N-[9-(propan-2-yl)-1,2,3,4-tetrahydro-1,4-methanonaphthalen-6-yl]-1H-pyrazole-4-carboxamide;

(I-5) N-(3',4'-dichlorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide;

(I-6) N-(2',4'-dichlorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide;

(I-7) 3-(difluoromethyl)-N-[2-(1,1,2,3,3,3-hexafluoropropoxy)phenyl]-1-methyl-1H-pyrazole-4-carboxamide;

(1-8) 3-(difluoromethyl)-1-methyl-N-[2-(1,1,2,2-tetrafluoroethoxy)phenyl]-1H-pyrazole-4-carboxamide;

(1-9) 3-(difluoromethyl)-1-methyl-N-(3',4',5'-trifluorobiphenyl-2-yl)-1H-pyrazole-4-carboxamide;

in combination with trifloxystrobin.

4. Use according to claim 1, characterized in that, the composition comprises at least one carboxamide selected from the group consisting of

((I-1) *N*-[2-(1,3-dimethylbutyl)phenyl]-5-fluoro-1,3-dimethyl-1*H*-pyrazole-4-carboxamide;

(I-2) *N*-(3',4'-dichloro-5-fluoro-1,1'-biphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1*H*-pyrazole-4-carboxamide;

(I-3) N-{2-[1,1'-bi(cyclopropyl)-2-yl]phenyl}-1-methyl-3-(difluoromethyl)-1H-pyrazole-4-carboxamide;

(I-4) 3-(difluoromethyl)-1-methyl-N-[9-(propan-2-yl)-1,2,3,4-tetrahydro-1,4-methanonaphthalen-6-yl]-1H-pyrazole-4-carboxamide;

(I-5) N-(3',4'-dichlorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide;

(I-6) N-(2',4'-dichlorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide;

(I-7) 3-(difluoromethyl)-N-[2-(1,1,2,3,3,3-hexafluoropropoxy)phenyl]-1-methyl-1H-pyrazole-4-carboxamide;

(I-8) 3-(difluoromethyl)-1-methyl-N-[2-(1,1,2,2-tetrafluoroethoxy)phenyl]-1H-pyrazole-4-carboxamide;

(I-9) 3-(difluoromethyl)-1-methyl-N-(3',4',5'-trifluorobiphenyl-2-yl)-1H-pyrazole-4-carboxamide;

in combination with prothioconazole.

5. Use according to claim 1, characterized in that, the composition comprises at least one carboxamide selected from the group consisting of

(I-1) *N*-[2-(1,3-dimethylbutyl)phenyl]-5-fluoro-1,3-dimethyl-1*H*-pyrazole-4-carboxamide;

(I-2) *N*-(3',4'-dichloro-5-fluoro-1,1'-biphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1*H*-pyrazole-4-carboxamide;

(I-3) N-{2-[1,1'-bi(cyclopropyl)-2-yl]phenyl}-1-methyl-3-(difluoromethyl)-1H-pyrazole-4-carboxamide;

(I-4) 3-(difluoromethyl)-1-methyl-N-[9-(propan-2-yl)-1,2,3,4-tetrahydro-1,4-methanonaphthalen-6-yl]-1H-pyrazole-4-carboxamide;

(I-5) N-(3',4'-dichlorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide;

(I-6) N-(2',4'-dichlorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide;

(I-7) 3-(difluoromethyl)-N-[2-(1,1,2,3,3,3-hexafluoropropoxy)phenyl]-1-methyl-1H-pyrazole-4-carboxamide;

(I-8) 3-(difluoromethyl)-1-methyl-N-[2-(1,1,2,2-tetrafluoroethoxy)phenyl]-1H-pyrazole-4-carboxamide;

(I-9) 3-(difluoromethyl)-1-methyl-N-(3',4',5'-trifluorobiphenyl-2-yl)-1H-pyrazole-4-carboxamide;

in combination with tebuconazole.

6. Use according to claim 1, characterized in that, the composition comprises at least one carboxamide selected from the group consisting of

(I-1) *N*-[2-(1,3-dimethylbutyl)phenyl]-5-fluoro-1,3-dimethyl-1*H*-pyrazole-4-carboxamide;

(I-2) *N*-(3',4'-dichloro-5-fluoro-1,1'-biphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1*H*-pyrazole-4-carboxamide;

(I-3) N-{2-[1,1'-bi(cyclopropyl)-2-yl]phenyl}-1-methyl-3-(difluoromethyl)-1H-pyrazole-4-carboxamide;

(I-4) 3-(difluoromethyl)-1-methyl-N-[9-(propan-2-yl)-1,2,3,4-tetrahydro-1,4-methanonaphthalen-6-yl]-1H-pyrazole-4-carboxamide;

(I-5) N-(3',4'-dichlorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide;

(I-6) N-(2',4'-dichlorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide;

(I-7) 3-(difluoromethyl)-N-[2-(1,1,2,3,3,3-hexafluoropropoxy)phenyl]-1-methyl-1H-pyrazole-4-carboxamide;

(I-8) 3-(difluoromethyl)-1-methyl-N-[2-(1,1,2,2-tetrafluoroethoxy)phenyl]-1H-pyrazole-4-carboxamide;

(I-9) 3-(difluoromethyl)-1-methyl-N-(3',4',5'-trifluorobiphenyl-2-yl)-1H-pyrazole-4-carboxamide;

in combination with fluquinconazole.

7. Use according to claims 1 to 6, characterized in that, the composition comprises the carboxamide (I) and the strobilurines (II) or the triazole (III) in a ratio of 50 : 1 to1 : 50 (I)/(II) or (I)/(III).

8. Use according to claims 1 to 7, characterized in that, the rust fungi are selected from soy bean rust and coffee rust.

9. Process for controlling diseases of soy bean plants, characterized in that the soy bean plants are treated with a fungicidal composition comprising

(I) at least one carboxamide selected from the group consisting of

(I-1) *N*-[2-(1,3-dimethylbutyl)phenyl]-5-fluoro-1,3-dimethyl-1*H*-pyrazole-4-carboxamide;

(I-2) *N*-(3',4'-dichloro-5-fluoro-1,1'-biphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1*H*-pyrazole-4-carboxamide;

(I-3) N-{2-[1,1'-bi(cyclopropyl)-2-yl]phenyl}-1-methyl-3-(difluoromethyl)-1H-pyrazole-4-carboxamide;

(I-4) 3-(difluoromethyl)-1-methyl-N-[9-(propan-2-yl)-1,2,3,4-tetrahydro-1,4-methanonaphthalen-6-yl]-1H-pyrazole-4-carboxamide;

(I-5) N-(3',4'-dichlorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide;

(I-6) N-(2',4'-dichlorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide;

(I-7) 3-(difluoromethyl)-N-[2-(1,1,2,3,3,3-hexafluoropropoxy)phenyl]-1-methyl-1H-pyrazole-4-carboxamide;

(1-8) 3-(difluoromethyl)-1-methyl-N-[2-(1,1,2,2-tetrafluoroethoxy)phenyl]-1H-pyrazole-4-carboxamide;

(I-9) 3-(difluoromethyl)-1-methyl-N-(3',4',5'-trifluorobiphenyl-2-yl)-1H-pyrazole-4-carboxamide;

at least one further compound selected from

(II) strobilurins, selected from the group consisting of

(II-1) fluoxastrobin;

(II-2) trifloxystrobin

or from

(III) triazoles, selected from the group consisting of

(III-1) prothioconazole;

(III-2) tebuconazole and

(III-3) fluquinconazole.

10. Process according to Claim 9 for controlling diseases of transgenic soy bean plants.

11. Process according to Claim 9 for controlling alternaria leaf spot (Alternaria spec. atrans tenuissima), anthracnose (Colletotrichum gloeosporoides dematium var. truncatum), brown spot (Septoria glycines), cercospora leaf spot and blight (Cercospora kikuchii), choanephora leaf blight (Choanephora infundibulifera trispora (syn.)), dactuliophora leaf spot (Dactuliophora glycines), downy mildew (Peronospora manshurica), drechslera blight (Drechslera glycini), frogeye leaf spot (Cercospora sojina), leptosphaerulina leaf spot (Leptosphaerulina trifolii), phyllostica leaf spot (Phyllosticta sojaecola), powdery mildew (Microsphaera diffusa), pyrenochaeta leaf spot (Pyrenochaeta glycines), rhizoctonia aerial, foliage, and web blight (Rhizoctonia solani), rust (Phakopsora pachyrhizi), scab (Sphaceloma glycines), stemphylium leaf blight (Stemphylium botryosum), target spot (Corynespora cassiicola), black root rot (Calonectria crotalariae), charcoal rot (Macrophomina phaseolina), fusarium blight or wilt, root rot, and pod and collar rot (Fusarium oxysporum, Fusarium orthoceras, Fusarium semitectum, Fusarium equiseti), mycoleptodiscus root rot (Mycoleptodiscus terrestris), neocosmospora (Neocosmopspora vasinfecta), pod and stem blight (Diaporthe phaseolorum), stem canker (Diaporthe phaseolorum var. caulivora), phytophthora rot (Phytophthora megasperma), brown stem rot (Phialophora gregata), pythium rot (Pythium aphanidermatum, Pythium

irregulare, Pythium debaryanum, Pythium myriotylum, Pythium ultimum), rhizoctonia root rot, stem decay, and damping-off (Rhizoctonia solani), sclerotinia stem decay (Sclerotinia sclerotiorum), sclerotinia southern blight (Sclerotinia rolfsii), thielaviopsis root rot (Thielaviopsis basicola).

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2009/006056

A. CLASSIFICATION OF SUBJECT MATTER
INV. A01N43/56 A01P3/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
A01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2007/017416 A (BASF AG [DE]; DIETZ JOCHEN [DE]; GEWEHR MARKUS [DE]; STRATHMANN SIEGFR) 15 February 2007 (2007-02-15) p.116-117 :"Anwendungsbeispiel 3: Nr.Id.344+ Pyraclostrobin" page 105, line 11 - page 106, line 22 table 4 -----	1-3,7,8
X	WO 2007/104437 A (BAYER CROPSCIENCE AG [DE]; DUNKEL RALF [FR]; SUTY-HEINZE ANNE [DE]; WA) 20 September 2007 (2007-09-20) page 49, line 21 - page 50, line 24 table 1 page 86, line 19 - line 24 -----	1-3,7,8

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[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
1 October 2009	15/01/2010

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Fort, Marianne

Form PCT/ISA/210 (second sheet) (April 2005)

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2009/006056

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2007/031141 A (BAYER CROPSCIENCE AG [DE]; DAHMEN PETER [DE]; WACHENDORFF-NEUMANN ULRI) 22 March 2007 (2007-03-22) page 25, line 14 - line 19 tables 1,2	1-3,7,8
A	WO 2006/131221 A (BAYER CROPSCIENCE AG [DE]; DUNKEL RALF [FR]; ELBE HANS-LUDWIG [DE]; GA) 14 December 2006 (2006-12-14) cited in the application the whole document	1-3,7,8
A	WO 2007/071656 A (BASF AG [DE]; DIETZ JOCHEN [DE]; STRATHMANN SIEGFRIED [DE]; GROTE THOM) 28 June 2007 (2007-06-28) cited in the application the whole document	1-3,7,8

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2009/006056

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1, 6-7(all partially), 2-3

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1(part.), 2-3, 7-8(part.):

Use of a fungicidal composition comprising (I) at least one carboxamide selected from the group consisting of (I-1)-(I-9) and at least one strobilurin compound (II) selected from the group consisting of (II-1) fluoxastrobin and (II-2) trifloxystrobin for controlling rust fungi in crop protection

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2. claims: 1(part.), 4-6, 7-8(part.)

Use of a fungicidal composition comprising (I) at least one carboxamide selected from the group consisting of (I-1)-(I-9) and at least one triazole compound (III) selected from the group consisting of (III-1) prothioconazole, (III-2) tebuconazole and (III-3) fluquinconazole for controlling rust fungi in crop protection

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3. claims: 9-11(part.)

Process for controlling diseases of soy bean plants, characterized in that the soy bean plants are treated with a fungicidal composition comprising (I) at least one carboxamide selected from the group consisting of (I-1)-(I-9) and at least one strobilurin compound (II) selected from the group consisting of (II-1) fluoxastrobin and (II-2) trifloxystrobin

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4. claims: 9-11(part.)

Process for controlling diseases of soy bean plants, characterized in that the soy bean plants are treated with a fungicidal composition comprising (I) at least one carboxamide selected from the group consisting of (I-1)-(I-9) and at least one triazole compound (III) selected from the group consisting of (III-1) prothioconazole, (III-2) tebuconazole and (III-3) fluquinconazole

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Information on patent family members

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PCT/EP2009/006056

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